

Amendments to the Specification

Please replace the paragraph beginning at page 6, line 28, with the following rewritten paragraph:

[26] Figure 1 illustrates in outline the implementation of a time-of-flight mass spectrometer according to this invention. A beam splitter (2) divides the laser beam from the pulsed laser (1), and the partial laser beams are diverted via two fixed-position mirrors (3 and 4) onto the samples located on a sample carrier (5). A movement system 11 is provided for moving the sample carrier. The laser beams are focused by a lens that is not shown, or by a mirror having concave form (3). Nine of the samples (only three of the samples are visible in the side view) are located on the focus pattern, and are ionized simultaneously by the pulse of laser light. The ions from the nine samples are withdrawn by a focusing aperture system (6), and form ion beams (dotted) that are projected by a single lens (7) onto nine partial regions (of which only three are visible) on a channel plate secondary electron multiplier (8). The secondary electron currents amplified in the partial areas arrive at nine anodes (9) (of which three are visible), whose currents are now fed to nine signal processing systems of signal processing apparatus 12. This allows nine samples to be analyzed in the time during which otherwise only one sample would be available.

Please replace the paragraph beginning at page 7, line 3, with the following rewritten paragraph:

[27] Figure 2 represents in outline a different implementation of a time-of-flight mass spectrometer according to this invention. The pulses of laser light from a pulsed laser (1) are sent in sequence by a mirror (10) that can be moved piezo-electrically, and by another mirror (4) onto nine samples on the sample carrier (5). A movement system 11 is provided for moving the sample carrier. The beam can again be focused here by a lens, not shown, or by implementing either mirror (10) or (4) in convex form. The nine samples are located in a focus pattern that is generated in sequence. The ion streams from the nine samples (of which three are visible) are now projected in sequence by the

accelerating aperture system (6) and the single lens (7) onto the channel plate of the secondary electron multiplier, amplified there as secondary electron currents, and collected by an anode collector (9). The spectral currents collected one after another are now fed to a single signal processing system 13 that can handle the spectra from the samples separately, because these arrive one after another.